The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 16

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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Ex parte JOSEPH PATRELLO

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Appeal No. 1998-2537
Application 08/680,602

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HEARD: August 16, 2000

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Before McCANDLISH, Senior Administrative Patent Judge, and COHEN and FRANKFORT, Administrative Patent Judges.

FRANKFORT, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1 through 4, which are all of the claims pending in the application. Claim 5 has been canceled.

Appellant’s invention is directed to a method of manufacturing a depressed center abrasive wheel having a thickness of less than three thirty-seconds (3/32) of an inch. The method comprises the steps of combining metered abrasive grains (12), metered liquid resin (14), and other grinding aids (16) into a hopper, which is then transferred into a mixing chamber. This mixture and layers of fiberglass (26) or equivalent reinforcing materials are provided in press cavities (24) of a hydraulic press having mating platens (22) having flat surfaces to create flat “green” wheels. The flat “green” wheels are then taken out of the press and disposed between metal plates (32), each having a depressed wheel center portion which clamps the flat “green” wheel and forms the depressed center portion of the “green” wheel (Figure 3). This clamped assembly is then cured to produce the final depressed center abrasive wheel product. Claim 1 is representative of the subject matter on appeal and a copy of that claim may be found in the Appendix to appellant's brief.

The prior art references of record relied upon by the examiner as evidence of obviousness are:

Graham	3,836,345	Sept. 17, 1974
Huber et al. (Huber)	4,615,151	Oct. 7, 1986

Claims 1 through 4 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Graham in view of Huber.

Rather than attempt to reiterate the examiner's full statement with regard to the above noted rejections and conflicting viewpoints advanced by the examiner and appellant regarding the rejection, we make reference to the final rejection (Paper No. 5, mailed September 2, 1997) and the examiner's answer (Paper No. 10, mailed February 20, 1998) for the reasoning in support of the rejection, and to appellant's brief (Paper No. 9, received November 6, 1997) and reply brief (Paper No. 12, received April 3, 1998) for the arguments thereagainst.

OPINION

In reaching our decision in this appeal, we have given careful consideration to appellant's specification and claims, to the applied prior art references, and to the respective positions as set forth by the appellant and the examiner.

With respect to the 35 U.S.C. § 103(a) rejection of independent claim 1 as being obvious over Graham in view of Huber, we note that the primary reference to Graham discloses a

laminated grinding wheel (1) having a thickness of usually between one sixteenth (1/16) of an inch to three (3) inches (col. 3, lines 36-38), made of a plurality of layers of stretchable creped paper (8) and abrasive particles (11) adhered to the crepe paper via thermosetting resin (12), creating a grinding wheel lay-up. In an alternative embodiment, the lay-ups are made of layers of mat paper (2)

and grit paper (3) bonded together by means of a thermosetting adhesive. The lay-ups are then placed in a suitable press which may comprise heated upper and lower platen members, to which pressure may be applied (col. 3, lines 31-41). The secondary reference to Huber discloses a method for manufacturing a sound absorbing grinding wheel comprising a plurality of grinding layers (1) comprising abrasive grains, filler and a binder; at least one dampening layer formed by foils (2), preferably butyl rubber; and a reinforcing tissue (3). The method comprises pouring and flattening a layer of grinding mixture (1) in a mold (5) and inserting a foil (2) lined with reinforcing tissue (3). More grinding mixture (4) is poured thereon and another layer of foil (2) and reinforcing tissue (3) may be placed thereon and repeated as desired. This lay-up is then compressed in the

mold (5) to create a grinding wheel blank (7). After removing the grinding wheel blank (7) from the mold (5), the blank is clamped between clamping plates (6) and cured. Huber notes (col. 2, lines 66-68) that the clamping plates (6) are

conformable to the finished grinding wheel and are to ensure the accuracy in shape and dimension thereof.

It is the examiner's position that Graham discloses the production of flat or depressed center abrasive wheels having a thickness of one sixteenth (1/16) of an inch. For the process of forming depressed wheels, the examiner (on page 5 of the answer), points to col. 9, line 57 to col. 10, line 3, of Graham, which states:

> Where the wheels are cold pressed, the lay-ups preferably will be die cut to approximate final diameter and arbor hole dimensions and the lay-ups pressed at room temperatures for 1 to 3 minutes to stops [sic] which establish wheel thickness. The lay-ups are then removed from the press and stacked on a metal dowel rod of slightly smaller diameter than the arbor holes, with metal plates (flat for cutoff wheels or shaped for depressed center wheels) and release sheets positioned between adjoining lay-ups, and pressure is applied to the stack so formed by clamps or the like to maintain the stack in compressed condition. The stack is then placed in an oven and cured for about 20-24 hours at a temperature of from 325° F. to 375° F.

The examiner states that since lay-ups produced in the pressing step above can be used for production of flat or depressed center wheels, “it seems clear that a press with parallel cavity surfaces capable of producing wheels of flat geometry was used in this compressing step” (final rejection, pg. 2). The examiner then relies on Huber to teach the use of a mold for producing flat lay-ups or “green” wheels wherein the resin and the abrasive grain mixture are poured into a mold and compressed. From these teachings, the examiner concludes that it would have been obvious to one of ordinary skill in the art to have used the mixture and mold of Huber for producing “the instant flat green wheel since these features produce a desired green wheel suitable for subsequent processing and clamping with plates as taught by Huber” (final rejection, page 3).

In response to the examiner’s rejection, the appellant argues that the examiner has relied upon hindsight and that the teachings of the present invention were used as a template by the examiner to recreate the invention as claimed

(brief, pp. 8 and 9). We agree with the appellant that Graham and Huber, singly or in combination, do not teach or suggest the step of

clamping a flat "green" wheel between depressed center metal plates to form a depressed center "green" wheel as claimed in appellant's claims on appeal. In fact, Graham states in col. 4, lines 17-19, that "the hub or center portion 5 may be offset from the plane of the grinding portion of the disc during molding" (emphasis added). Col. 9, lines 46-48, states that "[i]t is also within the spirit of the invention to mold the grinding wheels using either post curing or cold pressing techniques" (emphasis added). Then in col. 9, lines 57-61, Graham states that "where the wheels are cold pressed, the lay-ups . . . [are] pressed at room temperatures for 1 to 3 minutes . . . [and] then removed from the press and stacked on a metal dowel rod . . . with metal plates (flat for cutoff wheels or shaped for depressed center wheels)" (emphasis added) and then subjected to pressure applied to the stack so

formed by clamps or the like to maintain the stack in compressed condition. The stack is then placed in an oven and cured.

From our evaluation of the disclosure of the Graham patent as a whole, it is our opinion that the noted passages above clearly suggest that the depressed center portion of the lay-ups is formed during the initial cold pressed molding stage

and not during the subsequent stage of being positioned between the depressed center metal plates, as the examiner alleges.

Since the lay-ups are already formed with depressed centers, it naturally follows that they would then be positioned between plates with depressed center portions as stated in Graham col. 9, lines 64 and 65. Moreover, we do not agree with the examiner's position (answer, pg. 4) that if "Graham was using a 'depressed center mold' to form the initial green

wheel it seems clear that the reference would have disclosed this type of press in the preparation of the lay-ups at Col. 9, lines 57-61." Merely pointing out that the prior art is silent as to what the examiner feels should have been included is not a disclosure or teaching in the reference itself and is not a valid reason for rejection of a claim.

With regard to Huber, we also do not find any teaching or suggestion of clamping a flat "green" wheel between depressed center plates to form a depressed center "green" wheel. Huber describes his process (col. 2, lines 50-68) stating that after the mixture is poured and flattened or vibrated smooth, the foil and reinforcing tissue are inserted into the mold and compressed

"to obtain a grinding wheel blank 7 having the desired dimensions." After this molding process, the blank is tightened firmly between clamping plates and then cured. There is no mention of a depressed center clamp being used, nor does the reference explicitly state that the mold is exclusively a flat

mold. The statement that "the mixture is poured and flattened or vibrated smooth" prior to the molding process is not evidence that the mold is exclusively a flat mold, as such an operation could also be performed on a mold having a depressed center portion.

It is not difficult to see how the examiner could have interpreted the sometimes cryptic passages in Graham and Huber to arrive at the stated rejection. However, in reviewing both Graham and Huber as a whole, we find that these references each relate to "green" wheels or lay-ups that already include a depressed center portion and that they do not teach or suggest a method as set forth in appellant's claim 1 on appeal. Therefore, we find that the examiner has not established a prima facie case of obviousness.

In view of the foregoing, we will not sustain the 35 U.S.C. § 103(a) rejection of claim 1 posited by the examiner.

Since claims 2 through 4 depend from claim 1 and include all of the limitations of claim 1, we will also not sustain the examiner's rejection of these claims under 35 U.S.C. § 103(a).

In summary, we will not sustain the examiner's rejection of claims 1 through 4 under 35 U.S.C. § 103(a) as being unpatentable over Graham in view of Huber. Therefore, the decision of the examiner is reversed.

REVERSED

HARRISON E. McCANDLISH)
Senior Administrative Patent Judge)
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) BOARD OF PATENT
IRWIN CHARLES COHEN) APPEALS AND
Administrative Patent Judge) INTERFERENCES
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